

DIVISION 5 - METALS

SECTION 05125 - MISCELLANEOUS FASTENERS

PART 1 - GENERAL

1.01 - DESCRIPTION

A. For other requirements see General Conditions and General Requirements (Division 1).

B. SCOPE OF WORK

Fasteners for miscellaneous work.
Washers.

1.02 - QUALITY CONTROL

A. Manufacturer's load test standard procedures.

1.03 - REFERENCE STANDARDS

1. Federal Specifications FF-S-111 for bolt anchors.
2. GSA Specifications FF-B-488C #3.3 for toggle bolts.
3. FS FF-W-92 for metal washers.
4. FS FF-W-84 for lock washers.
5. ASTM B633, SC1, Type III for safety sleeve anchors.

1.04 - BUILDING CODES AND INSPECTIONS

A. All work to comply with Michigan Building Code.

1.05 - COORDINATION

A. Contractor to coordinate location of fasteners with other trades as required.

1.06 - TESTING

A. Copies of tests required only when requested.

1.07 - JOB CONDITIONS

A. Contractor to verify substrate condition in the field for proper selection.

1.08 - PRODUCT DELIVERY, STORAGE AND HANDLING

A. All anchors to be delivered in sealed packages. All packages to be labeled by manufacturer.

1.09 - SUBMITTALS

- A. Submit manufacturer's certifications of loads.
- B. Submit manufacturer's data and application instructions.
- C. Contractor to keep set of installation instructions at job site.

PART 2 - MATERIALS

2.01 - GENERAL

- A. Non-ferrous metal or hot-dip galvanized for exterior installations and as required for corrosion resistance.
- B. All fasteners to be compatible with other metals.
- C. All heads to be "Phillips" type and countersunk when exposed in finished areas, unless otherwise noted or shown.
- D. Comply with fire ratings when used in fire rated walls or partitions.

2.02 - MASONRY FASTENERS

- A. "Tapcon" fasteners by "Buildex" or approved equal. 3/16" diameter or 1/4" diameter, as required for loads. 1" to 1-3/4" minimum penetration in solid concrete block or brick. Minimum withholding power of 800# and 700# in shear. To comply with FS FF-S-111.
- B. TOGGLE BOLTS
Tumble-wing type, complying with GSA Specifications FF-B-488C #3.3, "SUP-R-Toggles" (Loktite #10) by "USE Diamond" or approved equal, with minimum withholding power of 1,000 pounds.
- C. "Hilti" sleeve anchor #HX 1/2" diameter x 2-1/4" with 1-1/2" penetration. Minimum working loads to be 500 pounds pull-out and 500 pounds shear. Equal manufacturers to be approved by EPA's On-Site Representative.

2.03 - MOLLEY ANCHORS

- A. Not allowed.

2.04 - CONCRETE FASTENERS

- A. 1/4" diameter, "Blue Max" system by "Buildex" or equal approved. 2" minimum penetration in concrete. Minimum of 1,000 pounds withholding power and 1,500 pounds in shear. To comply with FS FF-S-111.

2.05 - PLAIN WASHERS

- A. Round, general assembly grade galvanized carbon steel, complying with FS FF-W-92.

2.06 - LOCK WASHERS

- A. Helical spring type, galvanized carbon steel, complying with FS FF-W-84.

2.07 - DRYWALL FASTENERS

- A. FOR METAL SUBSTRATE
To comply with ASTM C646-78 Specifications. "Hi-low" type S bugle head drywall screws by "Buildex" or equal (7 x 1-1/4" minimum size).
- B. FOR WOOD SUBSTRATE
To comply with ASTM C646-78 specs. "Hi-low" type W bugle head screws by "Buildex" or equal (7 x 1-1/4" minimum size).

2.08 - CONCRETE SAFETY BOLTS

- A. "HSL" expansion anchor, heavy duty sleeve type, zinc plated per ASTM B633, SC1, Type III, by "Hilti" Fastening Systems or equal to be approved by the Engineer. 5500# tensile strength minimum and 8000# shear strength minimum.

PART 3 - INSTALLATION

3.01 -

- A. All fasteners to be installed per manufacturer's instructions. Contractor to keep at job site one (1) copy available for EPA's On-Site Representative.

3.02 -

- A. Use fasteners of required type, size and thickness to produce adequate strength and durability. Work to be true and level with accurate angles, straight and tight in place.

3.03 -

- A. Pre-drill for all fasteners with proper bit size to guarantee required loads specified in PART 2.

3.04 -

- A. Provide fasteners long enough to provide minimum penetration specified in PART 2.

3.05 -

- A. The use of impact power tools is not allowed to install fasteners.

3.06 -

- A. Clean-up all leftover materials and debris after completion of the work.

3.07 - GUARANTEE

- A. One (1) year after FINAL acceptance of the WHOLE project by the Owner.

END